



BOTULISM

What is botulism?

Botulism is a rare but serious paralytic illness caused by a nerve toxin produced by the bacterium *Clostridium botulinum*.

1. Foodborne botulism is caused by eating foods that contain the botulism toxin. Foodborne botulism can be especially dangerous because many people can be poisoned by eating a contaminated food.
2. Wound botulism is caused by toxin produced from a wound infected with *C. botulinum*. The number of cases of wound botulism has increased in recent years because of the use of black-tar heroin.
3. Infant botulism occurs when an infant consumes the spores of *C. botulinum*, which then grow in the intestines and release toxin.

There is concern that botulism toxin might be used by terrorists, who could disseminate it through the air in the form of an aerosol (resulting in cases of inhalational botulism), or use it to contaminate food (resulting in cases of foodborne botulism).

How common is botulism?

In the United States an average of 110 cases of botulism are reported each year. Of these, about 25% are foodborne, 72% are infant botulism, and the rest are wound botulism. Outbreaks of foodborne botulism occur most years, and are usually caused by eating contaminated home-canned foods.

What are the symptoms of botulism?

Symptoms include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, and muscle weakness. Infants with botulism appear lethargic, feed poorly, are constipated, and have a weak cry and poor muscle tone. These are all symptoms of the muscle paralysis caused by the botulism toxin. If untreated, these symptoms may progress to cause paralysis of the arms, legs, trunk and respiratory muscles (potentially leading to death from respiratory failure). Death occurs in 5-10% of foodborne botulism cases. In foodborne botulism, symptoms generally begin 18-36 hours after eating a contaminated food, but they can occur as early as 6 hours or as late as 10 days.

How is botulism diagnosed?

Physicians may consider the diagnosis if the patient's history and physical examination suggest botulism. However, these clues are usually not enough to allow a diagnosis of botulism since certain other diseases can have similar symptoms, and special tests may be needed to exclude these other conditions. The most direct way to confirm the diagnosis is to demonstrate botulism toxin in the patient's serum or stool by injecting serum or stool into mice and looking for signs of botulism. The *C. botulinum* bacteria can also be isolated from the stool of persons with foodborne and infant botulism.

How can botulism be treated?

All forms of botulism can be fatal and are considered medical emergencies. After several weeks, the paralysis slowly improves, but with severe botulism, the patient may have to be on a breathing machine (ventilator) for weeks or months, along with receiving intensive medical and nursing care. If diagnosed early, foodborne, wound, and inhalational botulism can be treated with botulism antitoxin which blocks the action of toxin circulating in the blood. This can prevent patients from worsening, but recovery still takes many weeks to months. Wounds should be treated, usually surgically, to remove the source of the toxin-producing bacteria.

Ready in 3 is an emergency-preparedness program for Missouri. The Missouri Department of Health and Senior Services sponsors the program. **Ready in 3** aims to help residents and communities prepare for many types of emergencies from tornadoes to terrorism. For more information, visit www.dhss.mo.gov.

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How can botulism be prevented?

Proper precautions should be taken by persons preparing home-canned foods. Instructions on safe home canning can be obtained from county extension services or from the U.S. Department of Agriculture (see *The USDA Complete Guide to Home Canning* at <http://foodsafety.cas.psu.edu/canningguide.html>). Because honey can contain spores of *C. botulinum* and this has been a source of infection for infants, children less than 12 months old should not be fed honey. Honey is safe for persons 1 year of age and older. Wound botulism can be prevented by promptly seeking medical care for infected wounds and by not using injectable street drugs. Note that botulism cannot be spread from person to person.

What should I do if cases of botulism start to occur in my community?

Your local health department and the Missouri Department of Health and Senior Services will provide you with information.

Adapted from CDC. *Botulism: General Information*. October 18, 2001.